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ABSTRACT

This student guide is one of a series of self-contained materials for students enrolled in an emergency medical services (EMS) training program. Discussed in the individual sections of the guide are the following topics: the purpose and history of EMS professionals; EMS training, certification and examinations (national and state certification and exams and general exam information); learning skills (effective listening and note taking, techniques for reading a textbook more effectively, and test taking); and national and Texas organizations for emergency medical technicians. Sample multiple-choice exam questions are appended to the guide. (MN)

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EMS student handbook

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EMS Student Handbook

By

Patrick Ogle

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Editor / Mary Cook
Artist / Denise Sanderson
Art Director / Ben E. Smith
Production Coordinator / Barbara S. Lankes

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COMPLIANCE STATEMENT

TITLE VI, CIVIL RIGHTS ACT OF 1964; THE MODIFIED COURT ORDER, CIVIL ACTION 5281, FEDERAL DISTRICT COURT, EASTERN DISTRICT OF TEXAS, TYLER DIVISION

Reviews of local education agencies pertaining to compliance with Title VI Civil Rights Act of 1964 and with specific requirements of the Modified Court Order, Civil Action No. 5281, Federal District Court, Eastern District of Texas, Tyler Division are conducted periodically by staff representatives of the Texas Education Agency. These reviews cover at least the following policies and practices:

(1) acceptance policies on student transfers from other school districts;

(2) operation of school bus routes or runs on a non-segregated basis;

(3) nondiscrimination in extracurricular activities and the use of school facilities;

(4) nondiscriminatory practices in the hiring, assigning, promoting, paying, demoting, reassigning, or dismissing of faculty and staff members who work with children;

(5) enrollment and assignment of students without discrimination on the basis of race, color, or national origin;

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(7) evidence of published procedures for hearing complaints and grievances.

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Where a violation of Title VI of the Civil Rights Act is found, the findings are reported to the Office for Civil Rights, Department of Health, Education and Welfare.

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TITLE VII, CIVIL RIGHTS ACT OF 1964: EXECUTIVE ORDERS 11246 and 11375; TITLE IX 1973 EDUCATION AMENDMENTS: REHABILITATION ACT OF 1973 AS AMENDED; 1974 AMENDMENTS TO THE WAGE-HOUR LAW EXPANDING THE AGE DISCRIMINATION IN EMPLOYMENT ACT OF 1967; VIETNAM ERA VETERANS READJUSTMENT ASSISTANCE ACT OF 1972 AS AMENDED IN 1974.

It is the policy of the Texas Education Agency to comply fully with the nondiscrimination provisions of all federal and state laws and regulation by assuring that no person shall be excluded from consideration for recruitment, selection, appointment, training, promotion, retention, or any other personnel action, or be denied any benefits or participation in any programs of activities which it operates on the grounds of race, religion, color, national origin, sex, handicap, age, or veteran status (except where age, sex, or handicap constitute a bona fide occupational qualification necessary to proper and efficient administration). The Texas Education Agency makes positive efforts to employ and advance in employment all protected groups.

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Foreword

This publication is one of a series of self-contained materials for students enrolled in emergency medical services training. This material may be used in a classroom setting, or students may work individually at their own pace with suggestions, supervision, and evaluation by the instructor.

Every effort has been made to produce a publication that addresses the unique needs of our current student population. Students with limited English proficiency (LEP) as well as handicapped, educationally disadvantaged, and nontraditional students may require modification of the material in this publication. The professional staff of EIMC will gladly work with any instructor having these students to show how the instructional material can be adapted for specific individualized instruction. Consult local, state, and federal agencies that offer assistance and guidance and that can provide sound recommendations for productive classroom management.

Extension Instruction and Materials Center wishes to acknowledge with grateful appreciation the cooperation and assistance of the Learning Skills Center, The University of Texas at Austin, which provided most of the material in the "Learning Skills" section of this manual.

Kathryn R. Allen, Ph.D.
Acting Director, Extension Instruction
and Materials Center

INTRODUCTION

Emergency Medical Services—EMS—is a new and dynamic field. In less than twenty years, it has developed into a vitally important component of the overall health care strategy of the nation. Emergency Medical Technicians (EMTs) are professionals whose knowledge and expertise command respect from both other health care professionals and the general public. Favorable media attention has focused on this field so that many emergency medical terms and procedures are now familiar to the average person. At least one popular television series dramatized the work of Emergency Medical Technicians. Truly, in both professional respect and the public consciousness, EMS has come of age.

But how does all of this relate to you? Obviously, you have some interest in Emergency Medical Services, or you would not be reading this. This publication will be of value if you:

- want more information about the EMS profession and those skills and procedures that EMTs perform;
- want to investigate becoming an EMT, either as a paid career or as a highly meaningful volunteer service;
- have decided to begin EMT training, and want to know more about what to expect; or
- are already an EMT, and are planning to refresh or upgrade your knowledge and skills, either for recertification or reclassification at a higher rank.

This booklet is designed to:

- outline the purpose of the Emergency Medical Services and its short but significant history;
- describe the professional activities of Emergency Medical Technicians and profile the type of people who become EMTs;
- outline the nature of EMT training and retraining programs;
- provide information about EMT state certifications and national registration;
- sharpen EMT learning skills—how to study and take tests with less pain and more gain; and
- supply a list of professional organizations and other information sources of interest to EMTs.

EMERGENCY MEDICAL SERVICES

A former paramedic still active in emergency medicine recalled recently that what impressed him most about his EMT work was that when people are hurt, regardless of income, age, or anything else, they are all the same—they need help.

Purpose

Stated simply, the purpose of EMS is to **save lives.** Illness and injury can strike suddenly and severely. In contrast to earlier times, when patient care began only after arrival at a hospital, the emergency medical services concept is to initiate care as soon as possible, providing professional-level patient care at the scene of accident or injury and continuing it en route to the hospital. These vital minutes of care often spell the difference between life and death.

This first link in the chain of patient care is critical—all the technical capabilities of the modern hospital can do nothing for a patient who is dead on arrival.

Using their knowledge, skills, energy, and commitment to save lives, EMTs perform a valuable service to the community, the state, and the nation. There is great economic benefit in preventing lives from being cut short or greatly impaired by accident or illness. And there are values you can't put a price tag on—the survival of a child, a parent, a spouse, or a friend or relative.

History

Historians are able to trace the idea and practice of transporting patients as far back as the 1790s. This is a reasonable starting point for the history of ambulance systems, but relates to only one aspect of emergency medical services. While EMS has, in many cases, developed out of existing ambulance services, today's highly trained, skilled, and capable EMT has about the same relationship to the early ambulance attendant as a

modern-day surgeon has to the barber-surgeon of the middle ages.

The foundations of today's emergency medical services system were laid in the mid 1960s. Four significant events occurred in 1966; as a result, true emergency medical services systems began to rapidly evolve.

1) The National Research Council published the report "Accidental Death and Disability: The Neglected Disease of Modern Society," which pointed out that preventable deaths and disabilities were costing the nation billions of dollars a year. Other studies indicated that up to 25% of emergency patients died of survivable injuries, mostly due to blood loss or lack of oxygen.

2) The National Academy of Sciences/National Research Council report on trauma recognized a current lack of standards in treating traumatic injuries.

3) The National Highway Safety Act became law, and funding began for safety programs, including defensive driving for ambulances.

4) The American Heart Association began to produce training materials and programs covering cardiopulmonary resuscitation and basic life support for prehospital emergency care providers.

June 1970 saw the founding of the National Registry of Emergency Medical Technicians. Formed in response to a recommendation by President Lyndon B. Johnson's Committee on Highway Safety, the Registry is a national accreditation/certification agency that establishes EMT standards, including minimum training requirements and written and practical test criteria.

Nationwide support for a comprehensive EMS system became apparent during the course of a series of congressional hearings held in 1972 and 1973. The need for EMS was further emphasized at the National Conference on Cardiopulmonary Resuscitation and Emergency Cardiac Care. Of 600,000 deaths the previous year caused by heart disease, 350,000 occurred before the patients reached the hospital. Effective EMS could probably have saved a large percentage of those one-third of a million lives!

The Emergency Medical Services Act of 1973 provided grants and contracts to plan, implement, improve, and expand comprehensive EMS systems on a regional basis.

Because EMS was a new service, distinct and different from traditional ambulance services, the U.S. Department of Transportation gave it a new and distinct identifying symbol. The "Star of Life" emblem was adopted in 1973. It was designed to be used by both the private sector and the government to identify emergency medical care. State and federal agencies were authorized to help supervise the use of this symbol so that it would always identify only high quality, high credibility emergency medical care. (The emblem is on the cover.)

In 1974, the National Health Planning and Resources Development Act supported planning activities and other services to help individual states develop the rules, training, and certification programs necessary to field highly effective providers of prehospital emergency care.

As a field, Emergency Medical Services has developed a high degree of professionalism and effectiveness in a very short time. Considering the long histories of other health care professions, the fact that EMS and the EMTs have done so much in so short a time is remarkable.

THE EMS PROFESSIONALS

During its short history, the emergency medical services system has grown and developed impressively. Currently, Emergency Medical Technicians number 400,000 nationwide. Texas alone has 38,000 EMTs, and grants an additional 3000 state certifications to new EMTs each year. The need for EMTs is widespread. At last count there were 995 separate organizations providing emergency medical services in Texas alone.

There are four knowledge/skill levels for persons who provide emergency prehospital medical care. States vary both in training requirements and exact job titles for the different ranks. The titles for emergency care personnel defined under Texas statute follow. Alternate job titles are noted where available.

Emergency Care Attendant—ECA (alternate title: First Responder)
"...(a)n individual who has completed a minimum of 40 hours of training approved by the department (Texas Department of Health) and who is certified by the department to provide emergency prehospital care by providing initial aid that promotes comfort and avoids aggravation of an injury or illness." Trained in first aid, the emergency care attendant provides initial care until the EMT arrives.

Basic Emergency Medical Technician—EMT Basic (alternate titles: EMT-A, EMT-Ambulance)
"...(a)n individual who has received a minimum of 120 hours of training approved by the department and who is certified by the department as minimally proficient to perform emergency prehospital care that is necessary for basic life support and that includes the control of hemorrhaging and cardiopulmonary resuscitation."

Specially Skilled Emergency Medical Technician—EMT SS (alternate title: EMT Intermediate)
"...(a)n individual who has successfully completed the basic emergency medical technician requirements and an additional minimum of 160 hours of training approved by the department and who is certified by the department as minimally proficient in performing skills required to provide emergency prehospital care by initiating under medical supervision intravenous therapy and endotracheal or esophageal intubation or both."

Paramedic Emergency Medical Technician—EMT Paramedic
"...(a)n individual who has successfully completed the basic emergency medical technician requirements and an additional minimum of 400 hours of training approved by the department, and who is certified by the department as minimally proficient to provide emergency prehospital care by providing advanced life support that includes initiation under medical supervision of intravenous therapy, endotracheal or esophageal intubation or both, electrical cardiac defibrillation or cardioversion, and drug therapy."

The EMT's Responsibilities

Training texts go into far greater detail than we can in this brief space, but the general duties and responsibilities of EMTs include:

- proper care of equipment and vehicle before and after use;
- prompt response to calls, giving due regard to weather and traffic conditions;
- establishment of or aiding in control of the scene of accident or injury;
- gaining access to the patient and assessment of signs and symptoms;
- knowledgeable, skillful, and efficient medical care before transport;
- extrication of the patient and making ready for transportation;
- safe transport, maintaining patient care;
- orderly transfer of the patient to the medical facility; and
- proper communication with all involved persons, including accurate reporting and record keeping.

Personality Traits of an EMT

What kind of people become EMTs? What personality traits help them excel in this demanding calling. No single personality profile can cover everyone, but successful EMTs share a number of common qualities. The most noticeable characteristic of EMTs is that they are sincerely dedicated to serving their fellow human beings, and they derive a lot of satisfaction from dedicated service. In this imperfect world, the real rewards for an EMT's dedication and performance are often more spiritual than monetary. Volunteer EMTs donate their time and skills, serving without financial compensation. Paid EMTs will tell you that no one is in it just for the money—there are easier ways to make a living.

Emergency Medical Technicians as a group tend to be young, physically fit (the job demands it), and outgoing. Challenge and excitement attracts them. They work hard and play hard. They set high standards for themselves and others, and they meet those standards. They deal with people in a calm and professional manner and present a neat and clean appearance that gains the

confidence of patients and public alike. They are emotionally stable under trying conditions, and exert their leadership qualities when and where necessary. EMTs show initiative and can improvise when circumstances demand such resourcefulness. EMTs are good communicators, able to listen to others and to convey information, care, and concern.

EMS TRAINING

Over 10,000 persons participate in EMT training courses each year in Texas. The Department of Health sets the knowledge and skill standards that all EMTs must meet, but because of the geographical size and social and cultural diversity of Texas, people can get the training they need in a number of different ways. Regardless of its source, most training follows guidelines set by the United States Department of Transportation (DOT); however, the actual form of training may vary depending on local circumstances.

Rural

In rural settings where EMTs donate their time, training is usually scheduled at night or on weekends to avoid interfering with the volunteers' regular employment. Population size and travel distances may mean that training is offered only in certain places at certain times. Under these conditions, training is aimed specifically at meeting certification requirements by covering core competencies and knowledge.

Urban

In urban settings, where paid EMTs predominate, the greater population density and resources may allow EMT training to be available through several sources. Community colleges often provide training as part of an associate degree program. Classes are often taught during the day. Whenever training is part of a degree program there will very likely be entrance requirements, pre-tests, and other curriculum demands beyond those required for EMT certification alone.

Regardless of your locality or situation, it is important that you stay well informed on EMT training programs. Ask questions, seek information, and find out for yourself what kind of program it is, whether it prepares you properly for the certification or recertification examinations, and whether it meets your particular needs and objectives.

CERTIFICATION AND EXAMS

Certification is the official recognition that a person is competent to work as an emergency medical technician. Certification is achieved by passing a two-part examination, one on knowledge and one on skill. Two types of certification are available, national and state.

National Certification and Exams

National board certification is offered through the National Registry of EMTs, and is available to all ranks except Emergency Care Attendant/First Responder. National certification means that an EMT's ability to provide quality patient care is recognized nationally. It is a verifiable basis for reciprocity between states, making it easier for an EMT to resume work should he or she move to another state. National Registry certification periods last two years. National certification does not take the place of state certification, although some states base certification on National Registry exams. National exams consist of written and practical examinations.

State Certification

State certification permits an EMT to practice within a particular state. It is valid for a four-year period in Texas. Other states' certification periods vary from two to five years.

State Exams

The Texas Department of Health Bureau of Emergency Management administers statewide certification exams at all four levels, from Emergency Care Attendant through Paramedic Emergency Medical Technician. These exams deal strictly with knowledge content. Local EMS providers determine the pass-fail criteria of the knowledge exam, as well as test and evaluate EMT practical skills. The knowledge (written) exams in Texas are multiple-choice. (See sample exam questions at the end of this handbook.)

General Exam Information

All exam questions are very straightforward. Unlike tests you may have taken in other subject areas, certification exams have no "trick" questions or questions that require you to be a mind reader, no "curve" that automatically fails a percentage of the people taking the exam. The questions are formulated to closely follow the content outline and behavioral objectives of national and state recommended training programs. Their purpose is simple. They measure whether you grasp the knowledge well enough to be an effective, competent EMT. In a profession where knowledge can make the difference between life and death or disability, the ability to accurately measure this knowledge is critically important to the EMT and patient alike.

Because the certification exams closely follow the content of national and state recommended curriculum, it is important that your training program adequately covers all the subject matter that you will be tested on. Consult the printed materials available that outline course content. If you have any questions, ask your teacher or trainer.

The practical skills demonstrations are more flexible than the written examinations, but are equally as important. Knowledge is useless unless it can be physically applied as a part of patient care. Compare the skills to be covered in your training with those recommended by state and national bureaus. Be sure that your training adequately covers the skills you must demonstrate in the exam and practice on the job. Make sure you learn the skills properly.

LEARNING SKILLS

The ability to read, learn, and study efficiently and effectively is important in this age of information. So it is surprising how few of us make the effort to improve our learning, studying, and test-taking skills. The ability to absorb, organize, and synthesize information is, in many ways, a skill as important to the EMT's occupational survival as an EMT's skill at performing CPR is to the physical survival of a patient. Many of us know of people, blessed with natural ability and the desire to succeed, who could somehow never perform satisfactorily in a training or academic situation. Or we know others (perhaps ourselves!) whose anxieties about exam-taking or general "stage fright" have prevented them from demonstrating the mastery of knowledge and skills that they in fact possessed.

Before going into specifics, however, we need to make one very strong point about the whole business of learning: if anything in the form or content of your training is confusing or unclear to you, **ask questions.** Asking questions is not a sign of stupidity or lack of perception. It is a sign of interest and involvement on your part. The teacher is not there to ridicule you for asking questions. The instructor's role is to communicate skills and knowledge, and one of the best ways to do this is by answering your questions. Questions do not interrupt learning, they enhance it. You are doing yourself, the class, and the teacher a favor by seeking clarification of confusing points. And you will certainly be doing your future patients a favor! When training to work in a calling where death or disability are day to day concerns, there is no such thing as a stupid question. So when in doubt, ask.

The following suggestions, hints, and procedures have proven effective in helping to improve learning, studying, and test-taking abilities.

Effective Listening and Note Taking

Because you can think about four times as fast as a teacher can speak, it is easy to be distracted, become bored, and lose yourself in daydreaming. To listen effectively, you have to make an effort. Listening has to be an active process, and taking notes is one way to enhance your listening skills. Be systematic in taking and reviewing notes. This helps you understand and remember the content of lectures.

Before class or training session

- Test your knowledge and memory of the previous lecture or training session.
- Skim over the reading assignments to familiarize yourself with the main ideas, new technical terms, and so forth.
- Do whatever you can to ensure that you are physically and mentally alert.

(Fatigue, hunger, time of day, and where and how you sit are all factors that can affect your attention span.)
- Use whatever form of notebook optimizes your ability to take notes in an orderly and systematic fashion. (Notes taken in notebooks with full sized pages are easy to review. Notes taken on chewing gum wrappers and the backs of envelopes are not!)
- **Intend to listen.**

During the class or training session—
- Listen for (1) the information (what is said), and (2) the structure (how it is organized).
- Resist distractions, emotional reactions, or boredom.
- Use abbreviations and note organization consistently (then at a later date you will not have to guess what you wrote).
- Pay attention to the speaker's tone of voice, "body language," or other visual clues that emphasize important points.
- Label important points of information and organization (e.g., main points, examples, references, and so forth).
- Translate the lecture into your own words when it will help your understanding. (One exception is medical terminology. Become familiar and comfortable with correct medical terminology as quickly as possible. It is the language all health care professionals use.)
- Take plenty of notes. (If you feel you may not be taking enough notes, try setting a goal for yourself, such as filling one-half page with notes for every twenty minutes of class, or whatever is appropriate.)
- Ask questions if you do not understand.
- Listen carefully to information and summary statements given toward the end of the session. These are valuable in highlighting main points and reducing confusion. Many people are so busy putting on coats and fishing for car keys that they do not hear what may be the most informative part of the lecture.

After class or training session—
- Clear up any questions by asking your teacher or classmates.
- Fill in any missing points or misunderstood terms by consulting the text or other sources.
- Edit your notes, label the main points, add clues to aid recall, and note questions that need answers. (Using different ink colors may help highlight key points.)

Periodically—
- Review your notes. Glance at your recall clues and see how much you can remember **before** rereading the notes.
- Make up and answer possible test questions.

Reading a Textbook More Efficiently

Getting more out of your reading is a three step process: preview, read actively, recall. While at first glance this seems complicated and time consuming, it actually saves time because you learn better the first time, and have to do less "re-learning" when reviewing for the certification exam.

Preview. Previewing a book gives you a general outline of the main ideas and structure of the publication. Start by taking ten minutes to look over some key parts of the textbook. They will show you what it is about and how it is organized. Preview the—
- title
- front and back cover information
- biographical data of author(s)
- publication data
- table of contents
- introduction of preface
- index
- glossary
- major diagrams and charts

Then before you read each chapter or assignment, look over the title and introduction of each chapter, subheadings, first sentence of each paragraph (which usually contains the main idea of the paragraph), and the conclusion summary.

Previewing lets you quickly determine what the book is mainly about, how it is organized, its level of difficulty, and roughly how long it will take to read.

Read actively. Active reading involves you in understanding the material, it combats boredom, and it increases retention.

- Set realistic time goals and number of pages to be read.
- Divide the reading assignment into small sections, such as half a page, rather than trying to read the whole book through nonstop.
- Challenge yourself to understand the meaning of each section. You can do this by rephrasing the subheading or first sentence into question form. Then read the rest of the section to discover the facts that answer that question.
- Take breaks when you feel unable to concentrate on the material. You accomplish little when reading while drowsy, hungry, bored, or daydreaming, so do not even try. Do not combine reading with other activities. Take a short break. Then return to your reading with more energy and alertness, and devote full concentration to it.

Recall. Unfortunately, most of us forget 40-50% of what we read within 15 minutes after we read it! Immediate recall after reading each small section of material can increase retention rates substantially. After reading each section, try the following recall methods.

- Mentally recall or orally recite the highlights of the section.
- Ask yourself questions about what you just read, and answer them in your own words. This method is an excellent way of reviewing for exams.
- Underline or make marginal notes of the section's key words or phrases after you read it. This is the best way to decide the most important information to remember.
- Make separate notes or outlines of what you've read. This allows you to put the more technical material into your own words.
- Try team recall. What you do not know, a classmate may.

Highlighting and marking books for better learning. We all remember being told as children not to mark in books. But now that we are adults, it is okay to mark in our own books. In fact, it may be a good idea. Intelligent highlighting and marginal notation allows you to comprehend better.

- You decide what is important and how ideas are related. You analyze the material as you read it.
- You test your understanding by putting ideas into your own words.
- You concentrate better because you read actively.

Highlight and annotate a small section at a time after you have read it. Only after reading can you decide what is important.

Mark your books actively and consciously. Use space in the margins to summarize key ideas in a few words, to outline a passage, or to note connections with skills and clinical demonstrations.

Be economical. Underline as little as possible. Underline key words and phrases. Underline whole sentences only if needed. Try to highlight only the critical core of information.

Be consistent. Locate all significant ideas and details. Use various marks—like brackets, circles, and arrows—consistently. Avoid changing your methods of marking as you go through a book. It can cause confusion when you later review for the exam.

Memory Aids

The principles of memory are essentially the same as those of learning, and in many situations memory and learning are almost the same thing. A technical field of study like Emergency Medical Services, however, often requires rather specialized applications of memory, such as memorizing lists of previously unfamiliar medical terminology. Having to learn a large number of new and complicated words as an adult is really no different from having to learn more common vocabulary words as a child, so do not look on it as frightening or impossible.

Visual picturing/linking. One way to memorize lists is through visual picturing and linking. This means associating words with vivid visual images, then linking them in your mind to other word/image combinations.

Suppose you have to memorize the following list of veins in the body:

1. pancreatic
2. right gastroepiploic
3. left gastroepiploic
4. middle colic
5. right colic
6. right pancreaticoduodenal
7. superior mesenteric
8. inferior mesenteric
9. splenic
10. pyloric
11. coronary
12. inferior vena cava
13. ceptic
14. portal

To use visual picturing/linking, first make up a word or phrase that sounds like the name you want to remember, and one which you can vividly picture in your mind. Bright, active, silly images seem to work best.

Since the first vein on the list is the pancreatic, picture a **pan** being **creative.** Maybe it is a frypan painting a picture. Now link that image to the next item on the list. Perhaps the frypan is painting two pictures, one on its **right,** one on its **left.** Both pictures are of Fidel **Castro** using a piece of pipe to hit a padlock (**right** and **left Castro-pipe-lock** = right and left gastroepiploic). Link this to the next item on the list by imagining a 1950s rock and roll musician standing in the **middle** between the two pictures, and a second such person standing over to the **right.** Both men are wearing **cowlick** hairstyles (middle and right colic). Keep linking these visualized "sound-alikes" until you get to the end of the list. Since there are fourteen items on the list, it may be a good idea to imagine that in the first image the creative frypan is wearing a football jersey with the number "14" on it.

The important thing is to **make up your own pictures.** Make them bizarre, funny, or unusual in some other way. By using a technique like this, you may be surprised at the number of items you can remember.

By itself this visual linking technique cannot tell you much about the list, but it does act as a powerful tool in entering the names into your memory and keeping them there until you become familiar with them.

Other aids to remembering.

Problem: You have no desire to remember, no interest in the material, therefore no clear reason to remember.

Answer: Think awhile to find a reason to remember. Talk with the instructor or with students who do seem interested. Learn what motivates them. Write down and remember these reasons. Give yourself pep talks now and then.

Problem: You cannot remember the material because you have not understood it.

Answer: Get an overall view of the whole system before trying to remember details. One way is to read a simplified version of the material before re-tackling the original. Ask for help as soon as possible if you have tried hard and just cannot understand.
Caution: You must reach the point of understanding the material well before the exam so you can spend the last few days reviewing. Do not wait until the last minute to try to understand the material.

Problem: You read and underline the material casually, but nothing seems to sink in.

Answer: Read with the intent to remember. Hold yourself responsible for identifying the information that needs to be remembered. Make that first reading count.

Problem: You read the material thoroughly, but forget a lot of it quickly.

Answer: When first reading a section of material, stop every now and then and test yourself mentally on what you just read. Immediate recall of newly learned information is the essential first step to later remembering.

Problem: You have looked over the material repeatedly from beginning to end, but still don't remember.

Answer: Spend at least half your study time recalling and testing to see how much of the material is still unlearned. Concentrate on learning what you do not know. Continue to test yourself.

Problem: You know the information, but somehow you were not able to demonstrate your knowledge when you took a quiz.

Answer: Practice using the information you have learned in ways that resemble the ways you will be tested. Think up exam questions and answer them. Knowing the material is not enough. You also have to be able to use it on exam questions.

Tests

How to keep calm during test. Each level of EMS training requires you to take and pass

several multiple-choice tests to fulfill both class and certification requirements. With this in mind, the following points may help you through these exams.

- Prepare for the exam. Avoid last-minute cramming. Do not go without sleep the night before. Stop studying at least an hour before the test. Relax and compose yourself.
- Know the time and place of the exam. Know what materials—if any—you must bring. Be on time—not too early or too late. Do not rush.
- Do not talk about the test with others beforehand if you know it makes you anxious.
- Read over the test and develop a plan for taking it. Note time limits, which questions you'll answer first, and so forth.
- Ask questions to clarify any test content or testing procedure. Do not just sit there and stew.
- Have an aggressive but realistic attitude. Determine to do the best you can on the exam, but accept your limits of knowledge. Use everything you have learned to do well, but do not blame yourself for what you do not know.
- Reduce anxiety by being active. Lapses of memory during a test are normal. If you draw a blank on a question, go to others, and come back to the first question later. By then you may be able to recall the answer.
- Stay physically relaxed during the test. Neck and shoulder muscles often tense up during an exam. This increases anxiety and makes it harder to think. Take your mind off the test, pause for a moment, consciously relax tense muscles, and take several slow, deep breaths.
- Concentrate on the test itself. Do not waste time in worry, or doubt, or in wondering how others are doing. Do not worry about what you should have done or might have done. Instead, pay attention to what you can do now to make this exam a success for you.

Techniques for taking multiple-choice exams.

- Read directions carefully. Listen for oral directions or corrections.
- Glance quickly through the test to plan your time. Check to be sure your test is complete and that the pages are in order.
- Answer the questions first that you are sure of. The answers to these "easy" questions may help remind you of the answers to other, more difficult questions.
- Accept the questions at face value; don't read anything **into** or **out** of them.
- Be sure of the meaning of a question before answering it. Be alert for questions containing double negatives; they can be confusing.
- Give full attention to one question at a time. Do not worry about one while trying to answer another.
- Try to supply your own answer before reading the choices provided.
- If you're not sure of the answer, guess—unless there is a severe penalty factor in the scoring system.
- Change an answer only if you have a strong hunch it is wrong.
- If using a separate sheet, keep it close to the exam question pages; check often to be sure you are marking your responses in the properly numbered spaces.
- Give yourself time to look over your paper at the end of the exam period. Check for omitted questions, confusing or multiple answer marks, poor erasures, and so forth.

Learning Skills Summary—The Six Steps to Learning.

1. Keep active. Use more of your senses in learning. See it. Hear it. Read it. Write it. Say it.
2. Intend to learn completely the first time. Test yourself while reading.
3. Break large tasks down into small ones. Schedule your time into manageable amounts. Break large concepts down into easily learnable parts. "One day at a time" applies to learning, too.
4. Respect your personal clock. You know best how long you can concentrate on a task for a certain length of time. Schedule breaks, rests, or snacks with this in mind.
5. Maximize your study/learning environment. Food, drink, and noise usually

interfere with learning. Find the conditions that allow you to learn best, and make use of them.

6. Make it a habit to summarize and review. Take well-organized notes and mark your test materials efficiently. Note and mark with future reviewing in mind.

EMT ORGANIZATIONS AND INFORMATION

National

The National Registry of Emergency Medical Technicians (NREMT) was established in 1970 to promote improved delivery of emergency medical services by—

- assisting in the development and evaluation of EMT training programs;
- establishing qualifications for eligibility to apply for national registration;
- preparing and conducting examinations designed to ensure the competency of EMTs;
- creating a system for re-registration every two years;
- setting procedures for revoking registration certificates; and
- maintaining a directory of registered EMTs.

The National Registry develops guidelines and programs to raise competence levels of registered EMTs and thus ensure improved emergency medical services. National Board Certification is handled through the National Registry. For more information, call the NREMT at (614) 888-4484, or write:

NREMT
P.O. Box 29233
Columbus, Ohio 43229

The National Association of Emergency Medical Technicians (NAEMT) was founded in 1975 to meet the needs of EMTs throughout the country. The NAEMT promotes the professional status of the EMT; encourages national standardization of training, testing, and reciprocity; offers career information to both the public and professionals; and produces continuing education programs for its members. Over 20,000 EMTs belong to NAEMT. For more information, write:

NAEMT
P.O. Box 334
Newton Highlands
Massachusetts 02161-0334

Other national organizations that may interest EMTs include:

American Trauma Society
875 N. Michigan Avenue
Chicago, Illinois 60611

National Association for Search and Rescue
P.O. Box 2123
LaJolla, California 92038

National Council of State EMS Training Coordinators
P.O. Box 197
Basking Ridge, New Jersey 07927

The Texas Association of Emergency Medical Technicians (TAEMT), with over 1,400 members, has goals that parallel those of the NAEMT. For information on membership and other TAEMT services, contact:

TAEMT
P.O. Box 14358
Austin, Texas 78761

Other sources of information for Texas EMTs are:

Texas Public Health Association
4000 Medical Parkway
Austin, Texas 78756

Bureau of Emergency Management-EMS
Texas Department of Health
Austin, Texas 78756

Appendix

Sample Exam Questions

For each of the following multiple-choice questions, choose the most appropriate answer.

1. THE UMBILICAL CORD'S PRIMARY FUNCTION IS TO:

   A. Separate the fetus from the uterus
   B. Connect the fetus to the placenta
   C. Protect the fetus from injury during development
   D. Secure the fetus to the fallopian tube

2. YOUR PATIENT HAS BEEN MAKING REPAIRS IN THE BOILER ROOM OF A FACTORY. THE TEMPERATURE IN THE ROOM WAS OVER 100°. CO-WORKERS HAVE MOVED THE UNCONSCIOUS INDIVIDUAL TO A COOLER LOCA-TION BUT THE SKIN IS STILL HOT AND DRY. THE COLOR OF THE SKIN IS PROBABLY:

   A. White or blue, due to blood vessel constriction
   B. White or blue, due to blood vessel dilation
   C. Red or pink, due to blood vessel dilation
   D. Red or pink, due to blood vessel constriction

3. CUTANEOUS BLOOD VESSEL DILATION USUALLY CAUSES THE SKIN TO TURN WHAT COLOR?

   A. White
   B. Blue
   C. Red
   D. Mottled

4. PROPER EMERGENCY CARE FOR A CONSCIOUS PATIENT SUFFERING FROM GENERAL COOLING OF THE BODY (SYSTEMIC HYPOTHERMIA) MAY INCLUDE:

   A. Giving warm liquids
   B. Rewarming as rapidly as possible
   C. Moving patient's arms and legs vigorously to stimulate circulation
   D. All of the above

5. A 6 MONTH OLD BABY IS RESCUED FROM A HOUSE FIRE. YOUR PATIENT EXAMINATION REVEALS BURNS TO THE CHILD'S HEAD, CHEST, AND ABDOMEN. APPROXIMATELY WHAT PERCENTAGE OF THE CHILD'S BODY HAS BURNED?

   A. 18%
   B. 27%
   C. 36%
   D. 45%

6. IN USING THE ESOPHAGEAL OBTURATOR AIRWAY, THE LOCATION OF THE TUBE IS CHECKED BY:

A. Observing the chest rising and falling
B. Seeing the tube pass through the vocal cords
C. Ventilating the patient for at least 3 minutes with 100% oxygen
D. Asking the patient to cough and take slow, deep breaths

7. WHICH OF THE FOLLOWING IS CHARACTERIZED BY COLLAPSE OF THE ALVEOLI?

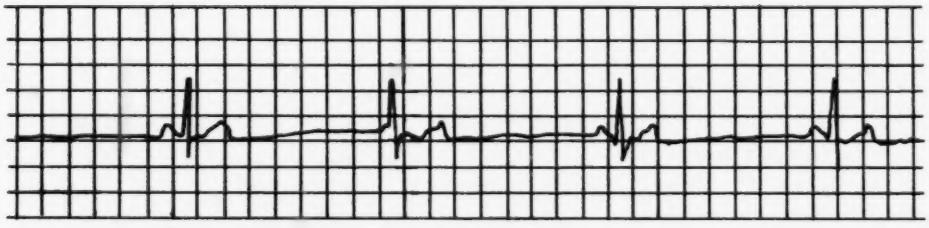
A. Atelectasis
B. Chronic bronchitis
C. Bronchial asthma
D. Emphysema

8. UNDER NORMAL CONDITIONS, THE STIMULUS FOR RESPIRATION IS:

A. The oxygen content of air
B. The oxygen saturation of arterial blood
C. Carbon dioxide content of the blood
D. Carbon dioxide in the air

9. DURING THE PUMPING ACTION OF THE HEART:

A. The atria and ventricles contract simultaneously
B. Both atria contract first, then both ventricles contract
C. The right atrium and ventricle contract first, then the left atrium and ventricle contract
D. Both ventricles contract first, then both atria contract



10. THE ATRIAL RATE IS: (REFER TO STRIP #1)

A. 30-40 per minute
B. 40-50 per minute
C. 50-60 per minute
D. 60-70 per minute